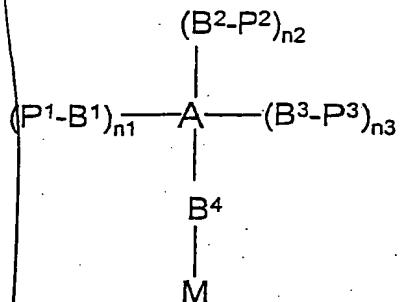


Claims

1. A compound comprising a repeating unit of formula (I)



5

I

in which:

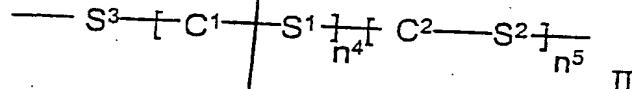
A represents a nitrogen atom, a carbon atom, a group $\text{-CR}^1\text{-}$ or an aromatic or alicyclic group, which is optionally substituted by a group selected from fluorine, chlorine, cyano and a C_{1-18} cyclic, straight-chain or branched alkyl group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl $\text{-CH}_2\text{-}$ groups are optionally replaced by a group selected from -O- , -CO- , -CO-O- , -O-CO- , $\text{-Si(CH}_3)_2\text{-O-Si(CH}_3)_2\text{-}$, $\text{-NR}^1\text{-}$, $\text{-NR}^1\text{-CO-}$, $\text{-CO-NR}^1\text{-}$, $\text{-NR}^1\text{-CO-O-}$, $\text{-O-CO-NR}^1\text{-}$, $\text{-NR}^1\text{-CO-NR}^1\text{-}$, -CH=CH- , $\text{-C}\equiv\text{C-}$ and -O-CO-O- , wherein R^1 represents a hydrogen atom or lower alkyl,

M represents a repeating monomer unit;

n^1 to n^3 each independently represent 0 or an integer having a value of from 1 to 3, with the proviso that $1 < n^1 + n^2 + n^3 < 4$;

P^1, P^2, P^3 each independently represents a photoactive group; and

B¹ to B⁴ each independently represent a residue of general formula II



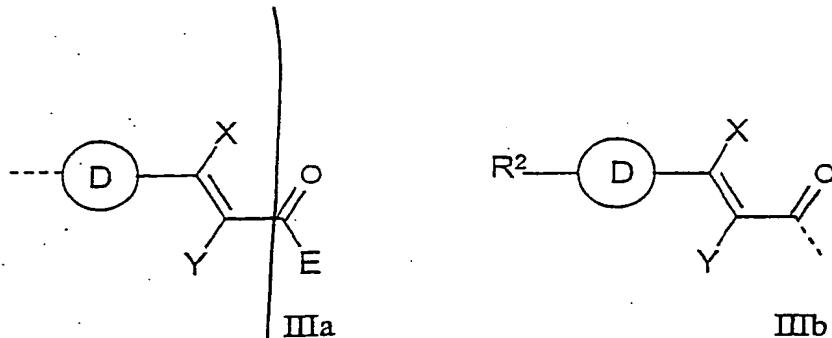
in which

5 S¹ to S³ each independently represent a single bond or a spacer group selected from a C₁₋₂₄ straight-chain or branched alkylene group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkylene -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O- wherein R¹ is as defined above,

10 C¹ and C² each independently represents an aromatic or an alicyclic group, which is optionally substituted by a group selected from fluorine, chlorine, cyano or a C₁₋₁₈ cyclic, straight-chain or branched alkyl group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O- wherein R¹ represents a hydrogen atom or lower alkyl, and

15 n⁴ and n⁵ are each independently 0 or 1.

20 2. A compound according to Claim 1, in which P¹ to P³ are selected from the general formulae IIIa and IIIb:



5. wherein the broken line indicates the point of linkage to S³ and wherein:

D represents pyrimidine-2,5-diyl, pyridine-2,5-diyl, 2,5-thiophenylene, 2,5-furanylene, 1,4- or 2,6-naphthylene; a phenylene group, which is optionally substituted by a group selected from fluorine, chlorine, cyano; or a C₁₋₁₈ cyclic, straight-chain or branched alkyl residue, which is optionally substituted by a single cyano group or by one or more halogen groups and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O-, wherein R¹ is as defined above;

E represents -OR³, -NR⁴R⁵ or an oxygen atom, which defines together with the ring D a coumarin unit, wherein R³, R⁴ and R⁵ are selected from hydrogen and a C₁₋₁₈ cyclic, straight-chain or branched alkyl residue, which is optionally substituted by one or more halogen atoms and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO- and -CH=CH-, or R⁴ and R⁵ together form a C₅₋₈ alicyclic ring;

X, Y each independently represent hydrogen, fluorine, chlorine, cyano or a C₁₋₁₂ alkyl group, which is optionally substituted by fluorine and in which one or

more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-O-, -O-CO- and -CH=CH-;

R² represents hydrogen or a C₁₋₁₈ straight-chain or branched alkyl residue, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl -CH₂- groups are independently optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O-, wherein R¹ is as defined above.

B

5 3. A compound according to Claim 1 or Claim 2, in which the repeating unit of formula (I) comprises at least 50% of the monomer building blocks comprising the compound of formula (I).

10 4. A compound according to any one of claims 1 to 3, in which the group M is selected from acrylate; methacrylate; 2-chloroacrylate; 2-phenylacrylate; acrylamide; methacrylamide, 2-chloroacrylamide and 2-phenylacrylamide, the nitrogen atom of which is optionally substituted by a lower alkyl group; vinyl ether; vinyl ester; a styrene derivative; siloxane; imide; amic acid; amic acid esters; amidimide; maleic acid derivatives and fumaric acid derivatives.

15 5. A method of manufacturing a compound of formula (I) comprising the polymerisation of one or more pre-finished monomer units of formula (I).

20 6. A method of manufacturing a compound of formula (I) comprising reacting a photoactive derivative with a functional polymer analogue of a polymer according to Claim 1.

25 7. A polymer layer comprising a compound of formula (I) in cross-linked form.

8. A polymer layer according to Claim 7, which is an orientation layer for an optical or an electro-optical device.

Sub A3

5 9. Use of a compound according to any one of claims 1 to 4 in the manufacture of an optical or an electro-optical device.

10. An optical or an electro-optical device comprising a compound according to any one of claims 1 to 4.

11. An optical or an electro-optical device comprising a layer according to Claim 7 or Claim 8.

12. A compound of formula (I), which is Poly-[1-[11-[5-[4-[(E)-2-methoxy-carbonylvinyl]benzoyloxy]-2-[6-[2-methoxy-(E)-4-(methoxycarbonylvinyl)-phenoxy]oxyhexyl]benzoyloxy]undecyloxycarbonyl]-1-methylethylene]

10 13. A compound of formula (I), which is Poly-[1-[11-[(E,E)-2,5-di-[6-[2-methoxy-4-(methoxycarbonylvinyl)phenoxy]oxyhexyl]benzoyloxy]undecyloxycarbonyl]-1-methylethylene].